

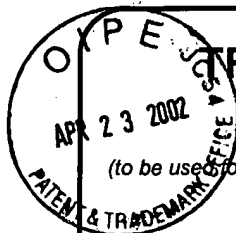
Please type a plus sign (+) inside this box → ☐

PTO/SB/21 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number 09/623,304

Filing Date February 21, 2001

First Named Inventor Silvia, Christopher P.

Group Art Unit 1647

Examiner Name Bridget E. Bunner

Total Number of Pages in This Submission

13

Attorney Docket Number 018512-000410US

RECEIVED

APR 25 2002

TECH CENTER 1600/2900

ENCLOSURES (check all that apply)

☐ Fee Transmittal Form

☐ Fee Attached

☐ Amendment / Response

☐ After Final

☐ Affidavits/declaration(s)

☐ Extension of Time Request

☐ Express Abandonment Request

☐ Information Disclosure Statement

☐ Certified Copy of Priority Document(s)

☐ Response to Missing Parts/ Incomplete Application

☐ Response to Missing Parts under 37 CFR 1.52 or 1.53

☐ Assignment Papers (for an Application)

☐ Drawing(s)

☐ Licensing-related Papers

☐ Petition Routing Slip (PTO/SB/69) and Accompanying Petition

☐ Petition to Convert to a Provisional Application

☐ Power of Attorney, Revocation Change of Correspondence Address

☐ Terminal Disclaimer

☐ Request for Refund

☐ CD, Number of CD(s)

☐ After Allowance Communication to Group

☐ Appeal Communication to Board of Appeals and Interferences

☐ Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)

☐ Proprietary Information

☐ Status Letter

☒ Other Enclosure(s) (please identify below):

Return Postcard; Communication Under 37 CFR 1.821-1.825 and Amendment; Sequence Listing Diskette; printed Sequence Listing pages 1-3; copy of Notice to Comply with copy of Error Report.

Remarks

The Commissioner is authorized to charge any additional fees to Deposit Account 20-1430.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm and Individual name

Townsend and Townsend and Crew LLP

Annette S. Parent

Reg. No. 42,058

Signature

Date

04/18/02

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on this date:

USPTO, Box Sequence, P.O. Box 2327, Arlington, VA 22202

04/18/02

Typed or printed name

Dana Kane

Signature

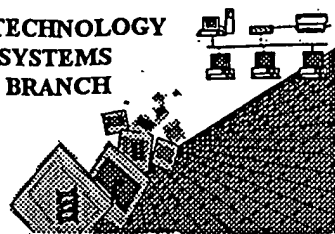
Date

04/18/02

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231. SF 1337814 v1

RAW SEQUENCE LISTING
ERROR REPORT

BIOTECHNOLOGY
SYSTEMS
BRANCH



10D12

TECH CENTER 1600/2900

APR 25 2002

RECEIVED

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/623,304
Source: 1647
Date Processed by STIC: 3/7/02

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.

PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)

PATENTIN 3.0 e-mail help: patin3help@uspto.gov or phone 703-306-4119 (R. Wax)

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE **CHECKER VERSION 3.1 PROGRAM**, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: U.S. Patent and Trademark Office, Box Sequence, P.O. Box 2327, Arlington, VA 22202
3. Hand Carry directly to:
U.S. Patent and Trademark Office, Technology Center 1600, Reception Area, 7th Floor, Examiner Name, Sequence Information, Crystal Mall One, 1911 South Clark Street, Arlington, VA 22202
Or
U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202
4. Federal Express, United Parcel Service, or other delivery service to: U.S. Patent and Trademark Office, Box Sequence, Room 1B03-Mailroom, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202

Revised 01/29/2002



RECEIVED

APR 25 2002

TECH CENTER 1600/2900



1647

Does Not Comply
Corrected Diskette Needed

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/623,304

DATE: 03/07/2002

TIME: 10:29:16

Input Set : A:\-4-1.app

Output Set: N:\CRF3\03072002\I623304.raw

3 <110> APPLICANT: Silvia, Christopher
 4 Yu, Weifeng
 5 ICAgen, Inc.
 7 <120> TITLE OF INVENTION: Identification and Expression of Human Kir5.1
 9 <130> FILE REFERENCE: 018512-000410US
 11 <140> CURRENT APPLICATION NUMBER: US 09/623,304
 12 <141> CURRENT FILING DATE: 2001-02-21
 14 <150> PRIOR APPLICATION NUMBER: US 60/076,612
 15 <151> PRIOR FILING DATE: 1998-03-03
 17 <150> PRIOR APPLICATION NUMBER: WO PCT/US99/04549
 18 <151> PRIOR FILING DATE: 1999-03-02
 20 <160> NUMBER OF SEQ ID NOS: 4
 22 <170> SOFTWARE: PatentIn Ver. 2.1
 24 <210> SEQ ID NO: 1
 25 <211> LENGTH: 383
 26 <212> TYPE: PRT
 27 <213> ORGANISM: Homo sapiens
 29 <220> FEATURE:
 30 <223> OTHER INFORMATION: human Kir5.1 alpha subunit monomer of inward
 31 rectifier potassium channel
 33 <220> FEATURE:
 34 <221> NAME/KEY: PEPTIDE
 35 <222> LOCATION: (351)..(383)
 36 <223> OTHER INFORMATION: tail region
 38 <400> SEQUENCE: 1
 39 Met Ser Tyr Tyr Gly Ser Ser Tyr His Ile Ile Asn Ala Asp Ala Lys
 40 1 5 10 15
 41 Tyr Pro Gly Tyr Pro Pro Glu His Ile Ile Ala Glu Lys Arg Arg Ala
 42 20 25 30
 43 Arg Arg Arg Leu Leu His Lys Asp Gly Ser Cys Asn Val Tyr Phe Lys
 44 35 40 45
 45 His Ile Phe Gly Glu Trp Gly Ser Tyr Val Val Asp Ile Phe Thr Thr
 46 50 55 60
 47 Leu Val Asp Thr Lys Trp Arg His Met Phe Val Ile Phe Ser Leu Ser
 48 65 70 75 80
 49 Tyr Ile Leu Ser Trp Leu Ile Phe Gly Ser Val Phe Trp Leu Ile Ala
 50 85 90 95
 51 Phe His His Gly Asp Leu Leu Asn Asp Pro Asp Ile Thr Pro Cys Val
 52 100 105 110
 53 Asp Asn Val His Ser Phe Thr Gly Ala Phe Leu Phe Ser Leu Glu Thr
 54 115 120 125
 55 Gln Thr Thr Ile Gly Tyr Gly Tyr Arg Cys Val Thr Glu Glu Cys Ser
 56 130 135 140

must give location and explain
 what residue Xaa represents - see
 p. 4

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/623,304

DATE: 03/07/2002

TIME: 10:29:16

Input Set : A:\-4-1.app

Output Set: N:\CRF3\03072002\I623304.raw

```

57 Val Ala Val Leu Met Val Ile Leu Gln Ser Ile Leu Ser Cys Ile Ile
58 145                150                155                160
59 Asn Thr Phe Ile Ile Gly Ala Ala Leu Ala Lys Met Ala Thr Ala Arg
60                165                170                175
61 Lys Arg Ala Gln Thr Ile Arg Phe Ser Tyr Phe Ala Leu Ile Gly Met
62                180                185                190
63 Arg Asp Gly Lys Leu Cys Leu Met Trp Arg Ile Gly Asp Phe Arg Pro
64                195                200                205
65 Asn His Val Val Glu Gly Thr Val Arg Ala Gln Leu Leu Arg Tyr Thr
66                210                215                220
67 Glu Asp Ser Glu Gly Arg Met Thr Met Ala Phe Lys Asp Leu Lys Leu
68 225                230                235                240
69 Val Asn Asp Gln Ile Ile Leu Val Thr Pro Val Thr Ile Val His Glu
70                245                250                255
71 Ile Asp His Glu Ser Pro Leu Tyr Ala Leu Asp Arg Lys Ala Val Ala
72                260                265                270
73 Lys Asp Asn Phe Glu Ile Leu Val Thr Phe Ile Tyr Thr Gly Asp Ser
74                275                280                285
v--> 75 Thr Gly Thr Ser His Gln Ser Arg Ser Ser Tyr Val Pro Arg Xaa Ile
76                290                295                300
77 Leu Trp Gly His Arg Phe Asn Asp Val Leu Glu Val Lys Arg Lys Tyr
78 305                310                315                320
79 Tyr Lys Val Asn Cys Leu Gln Phe Glu Gly Ser Val Glu Val Tyr Ala
80                325                330                335
81 Pro Phe Cys Ser Ala Lys Gln Leu Asp Trp Lys Asp Gln Gln Leu His
82                340                345                350
83 Ile Glu Lys Ala Pro Pro Val Arg Glu Ser Cys Thr Ser Asp Thr Lys
84                355                360                365
85 Ala Arg Arg Arg Ser Phe Ser Ala Val Ala Ile Val Ser Ser Trp
86                370                375                380

```

89 <210> SEQ ID NO: 2

90 <211> LENGTH: 1509

91 <212> TYPE: DNA

92 <213> ORGANISM: Homo sapiens

94 <220> FEATURE:

95 <223> OTHER INFORMATION: human Kir5.1 alpha subunit monomer of inward
 96 rectifier potassium channel

98 <220> FEATURE:

99 <221> NAME/KEY: unsure

100 <222> LOCATION: (1279)

101 <223> OTHER INFORMATION: n = a, g, c or t

103 <400> SEQUENCE: 2

```

104 ttactactac aaaactcacc tggatcccta agggcacagc aaagaatgag ctattacggc 60
105 agcagctatc atattatcaa tgcggacgca aaatacccag gctaccgccc agagcacatt 120
106 atagctgaga agagaagagc aagaagacga ttacttcaca aagatggcag ctgtaatgtc 180
107 tacttcaagc acatttttgg agaatgggga agctatgtgg ttgacatctt caccactctt 240
108 gtggacacca agtggcgcca tatgtttgtg atattttctt tatcttatat tctctcgtgg 300
109 ttgatatttg gctctgtctt ttggctcata gcctttcatc atggcgatct attaaatgat 360
110 ccagacatca caccttgtgt tgacaacgtc cattctttca caggggcctt tttgttctcc 420

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/623,304

DATE: 03/07/2002

TIME: 10:29:16

Input Set : A:\-4-1.app

Output Set: N:\CRF3\03072002\I623304.raw

```

111 ctagagaccc aaaccacccat aggatatggt tategctgtg ttactgaaga atgttctgtg 480
112 gccgtgctca tggatgaccc ccagtcacac ttaagttgca tcataaatac ctttatcatt 540
113 ggagctgcct tggccaaaat ggcaactgct cgaaagagag cccaaacccat tcgtttcagc 600
114 tactttgcac ttataggtat gagagatggg aagctttgcc tcatgtggcg cattggtgat 660
115 tttcggccaa accacgtggt agaaggaaca gttagagccc aacttctccg ctatacagaa 720
116 gacagtgaag ggaggatgac gatggcattt aaagacctca aattagtcaa cgaccaaatac 780
117 atcctggtca ccccggtaac tattgtccat gaaattgacc atgagagccc tctgtatgcc 840
118 cttgaccgca aagcagtagc caaagataac tttgagattt tggtagacatt tatctatact 900
119 ggtgattcca ctggaacatc tcaccaatct agaagctcct atgttccccg araaattctc 960
120 tggggccata ggtttaatga tgtcttggaa gtttaagagga agtattacaa agtgaactgc 1020
121 ttacagtttg aaggaagtgt ggaagtatat gccccctttt gcagtgccaa gcaattggac 1080
122 tggaaagacc agcagctcca catagaaaaa gcaccaccag ttcgagaatc ctgcacgtcg 1140
123 gacaccaagg cgagacgaag gtcatttagt gcagttgcca ttgtcagcag ctggtgaaaa 1200
124 ccctgaggag accaccactt tcgccacaca tgaatatagg gaaacacctt atcagaaagc 1260
W--> 125 tctccctgac tttaaacang aatcctctgt wgaatcccaa atgttagtcc taaaattgca 1320
126 attatgaggg ctaccactga atcattttat ctttcagcca atcaagtcgt tgtaaactgt 1380
127 gcttttttga aagtgttatg gctatgtttt atgatgatgc tgggtaagta gagtaagtta 1440
128 aacttggtaa aagataatct aaaaattcca tagttctcag ttattaaaat ttttcttgtt 1500
129 ccggaattc 1509
131 <210> SEQ ID NO: 3
132 <211> LENGTH: 24
133 <212> TYPE: DNA
134 <213> ORGANISM: Artificial Sequence
136 <220> FEATURE:
137 <223> OTHER INFORMATION: Description of Artificial Sequence:primer
139 <400> SEQUENCE: 3
140 cctaagggca cagcaaagaa tgag 24
142 <210> SEQ ID NO: 4
143 <211> LENGTH: 20
144 <212> TYPE: DNA
145 <213> ORGANISM: Artificial Sequence
147 <220> FEATURE:
148 <223> OTHER INFORMATION: Description of Artificial Sequence:primer
150 <400> SEQUENCE: 4
151 gtgtggcgaa agtgggtggtc 20

```

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/623,304

DATE: 03/07/2002
TIME: 10:29:18

Input Set : A:\-4-1.app

Output Set: N:\CRF3\03072002\I623304.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; Xaa Pos. 303

Seq#:2; N Pos. 1279

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/623,304

DATE: 03/07/2002
TIME: 10:29:18

Input Set : A:\-4-1.app
Output Set: N:\CRF3\03072002\I623304.raw

M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:288
M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:1260

APR 25 2002

TECH CENTER 1600/2900

Notice to Comply

Applicati n N .

09/623,304

Examin r

Bridget E. Bunner

Applicant(s)

SILVIA ET AL.

Art Unit

1647

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

Applicant must file the items indicated below within the time period set the Office action to which the Notice is attached to avoid abandonment under 35 U.S.C. § 133 (extensions of time may be obtained under the provisions of 37 CFR 1.136(a)).

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

- ☒ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to the final rulemaking notice published at 55 FR 18230 (May 1, 1990), and 1114 OG 29 (May 15, 1990). If the effective filing date is on or after July 1, 1998, see the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998).
- ☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
- ☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
- ☒ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."
- ☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
- ☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable from of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
- ☐ 7. Other:

Applicant Must Provide:

- ☒ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".
- ☐ An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.
- ☒ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216

For CRF Submission Help, call (703) 308-4212

PatentIn Software Program Support

Technical Assistance.....703-287-0200

To Purchase PatentIn Software.....703-306-2600

PLEASE RETURN A COPY OF THIS NOTICE WITH YOUR REPLY